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ABSTRACT

The 82 annotations in this bibliography describe papers and articles that relate technical writing to industry and the real world as well as to the liberal arts and the academic world. The citations are arranged into the following eight categories: (1) studies showing needs and demands in the real world; (2) studies of present practice as definitive; (3) descriptions of inhouse courses, team-taught courses, or case-method courses; (4) articles claiming that teachers of technical writing need experience in industry; (5) studies of professional writing to discover process, context, or deficiencies; (6) applications of theory to technical writing; (7) articles making connections with liberal arts or history; and (8) arguments that English teachers can make good technical writing teachers. (HOD)

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CONNECTIONS WITH INDUSTRY AND THE LIBERAL ARTS: ATTEMPTS TO LEGITIMIZE THE PROFESSION OF TEACHING TECHNICAL WRITING

BIBLIOGRAPHY OF ARTICLES AND PAPERS IN TECHNICAL WRITING

March 1985

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Bibliography of Articles and Papers in Technical Writing

I. CONNECTIONS WITH INDUSTRY AND THE REAL WORLD

A. Studies Showing Needs and Demands in the Real World

1. Bain, Robert. "Writing beyond the Ivy Walls: Some Implications for Freshman English." *TETYC*, 10 (Fall 1983) 1, 17-21.

Bain points out that writing instructors are under pressure to make their courses more effective and more relevant. He gives a brief history of approaches to teaching writing over the past twenty years and describes vocational writing courses being developed in two-year colleges. Although he does not suggest that all writing courses should become vocational, he does insist that teachers know why they teach what they teach. Inevitably, the real-world pressures will affect writing instruction.

2. Brillhart, L. V. and M. B. Debs. "A Survey of Writing and Technical Writing Courses in Engineering Colleges." *EE* 74 (Nov. 1983) 2, 110-113.

The authors report the results of a survey sent to engineering colleges. Data includes information on the average number of hours required in composition and technical writing, statistics on who teaches these courses, opinions about who should teach the courses, and opinions about the importance of writing skills and courses. The authors conclude that engineering colleges place a high value on writing skills, but that concern has not been translated into requirements that students take an adequate number of hours in writing.

3. Davis, R.M., "Technical Writing: Who Needs it?" *EE* 68 (2), Nov. 1977, 209-211.

Davis surveyed a group of prominent engineers to solicit their opinion about the importance of technical writing and its place in the engineering curriculum. Of the 348 questionnaires mailed, 73.8 percent were returned. The survey showed that engineers spend an average of 24% of their time writing and an additional 31% of their time working with material written by others. The vast majority of those surveyed believed technical writing should be a required course in the engineering curriculum.

4. Faigley, Lester and Thomas P. Miller. "What We Learn from Writing on the Job." *CE* 44 (October 1982) 6, 557-569.

Reporting on a survey mailed to college-trained people in Texas and Louisiana, Faigley and Miller give data on the following topics:

1) percentage of time spent writing, 2) numbers of letters, memos, and reports written per week, 3) percentage of writing jobs done in collaboration, 4) use of word processing equipment, 5) amount of dictation, 6) frequency of oral presentations, and 7) use of videotapes. They also report respondants' opinions about what should be taught. These conclusions are drawn: 1) college-trained people have a good knowledge of rhetorical demands; 2) writing is frequently used in all occupations; 3) respondants write a variety of documents in a variety of media using a variety of composing processes.

5. Given, Naomi. "A Report from the Field: Literacy in Eight New Jersey Corporations." *TETYC*, 9 (Fall, 1982) 1, 57-60.

Given reports what she discovered during a sabbatical in 1981 during which she worked with corporations in New Jersey. She reports the percentage of time spent writing and laments the poor writing skills of the general public, giving several examples. She then stresses industry's concern about these weaknesses by 1) pointing to the amount of money companies spend trying to train their employees, and 2) giving opinions from management level people about the need for better writing skills.

6. Hardwood, John T. "Freshman English Ten years After: Writing in the World." *CCC*, 33 (October 1982) 3, 281-283.

Hardwood reports the results of a survey conducted in 1979 among alumni of Christopher Newport College. Results include data on the frequency of writing, the type of writing, and the process of writing. He found that the longer people have been professionals the more writing they do. He also reports that those who write more often are in higher income brackets. He draws two conclusions: 1) focus on mechanics and useage is questionable; 2) renewed emphasis on invention and organization seems warranted.

7. Kimel, William R. and Melford E. Monsees. "Engineering Graduates: How Good are They?" *EE*, 70 (2), Nov. 1979, 210-212.

The authors surveyd members of engineering societies to determine how qualified recent engineering graduates were in specialized fields to fill the needs of their employers. The article contains three tables: 1) capabilities of civil engineering graduates, 2) capabilities of electrical engineering graduates, and 3) capabilities of mechanical engineering graduates. The ability to write and speak is listed along with specialized courses in each field's technology. Both civil and electrical engineers rated the ability to write and speak well as being the most important skill, but rated recent graduates' abilities inferior. Mechanical engineers rated writing and speaking second only to engineering materials and found recent graduates inferior writers and speakers.

8. Locker, Kitty O. "What Do Writers in Industry Write?" *TWT*, 9 (Spring 1982) 3, 122-127.

In an attempt to refute students' claims that they will never have to write, Locker lists over one hundred types of documents written in industry and business. On the basis of this list, Locker makes four suggestions about technical writing coursework. 1) It should include business communication. 2) It should cover expositon. 3) It should include units in logic. 4) It should stress audience analysis.

9. Schmelzer, Richard W. "New Responsibilities for the Technical Writer." *JTWC*, 11 (1981) 3, 217-221.

Because political issues will increasingly involve technical subjects, there is going to be a strong demand for writers who can interpret these subjects for the layman. Schmelzer points to Three Mile Island and the nuclear arms race as examples of subjects both highly sophisticated technologically and of common concern to the general public. If democracy, rather than rule by an elite, is to survive, technical writers will have to present these subjects clearly to the general public so that they can make intelligent decisions.

10. Spretnak, Charlene M. "A Survey of the Frequency and Importance of Technical Communication in an Engineering Career." *TWT*, 9 (Spring 1982) 3, 133-36.

In an attempt to arm technical writing teachers with material to convince students that technical writing is relevant, Spretnak conducted a survey of alumni from the engineering college of the University of California, Berkley. She reports engineers spend 25% of their time writing and 23% of their time reading. She also includes written comments from the respondants about the scarcity of good writers and about the value of writing skills. These comments are fairly extensive and should provide teachers with enough ammunition to carry them through a semester.

B. Studies of Present Practice as Definitive

11. Bataille, Robert R. "Writing in the World of Work: What our Graduates Report." *CCC*, 33 (October 1982) 3, 276-28.

This article reports the results of a survey sent to graduates of Iowa State university in 1980. Data is given for the following categories: 1) the respondants' evaluation of the importance of writing, 2) the frequency of writing, 3) the audiences and genres of writing, 4) the respondants' ideas of needed skills, and 5) the respondants' ideas about what kind of training best prepares one

for writing in the real world. The conclusions drawn are prescriptive based on real-world practices. 1) Writing is important. 2) Writing assignments should be short. 3) Audience analysis should be stressed. 4) Persuasiveness, clarity, and conciseness should be stressed rather than correctness. 5) Students should be informed that they cannot depend on a secretary to do their writing for them.

12. Brockman, R. John. "Advisory Boards in Technical Communications Programs and Classes." *TWT*, 9 (Spring 1982) 3, 137-146.

Brockman claims that the best way to assure that technical writing is meeting industry's needs is to have advisory boards. The article explains the value of the boards, tells how to find and keep members for a board, and describes the way boards are run.

13. Brockman, R. John. "Taking a Second Look at Technical Communications Pedagogy." *JTWC*, 10 (1980) 4, 283-291.

Citing current needs in industry, Brockman claims the current practice of teaching technical communication is weak in three areas. There needs to be more emphasis on rewriting and cooperative writing. There needs to be better instruction in how to generate creative graphics. Finally, there needs to be more emphasis on interpersonal communication rather than on large-group oratory.

14. Dandridge, Edmund Jr. "Notes Toward a Definition of Technical Writing." *JTWC*, 3 (1973), 265-271.

Dandridge reports the results of a statistical analysis of technical writing and non-technical writing documents. Based on current practice, he describes technical writing as being stylistically simple, characterized by short sentences and paragraphs. Sentences in technical writing tend to be simple rather than complex or compound. This simple style probably makes technical writing more direct than non-technical writing.

15. Mitchell, John. "It's a Craft Course: Indoctrinate, Don't Educate." *TWT*, 4 (1976) 1, 2-6.

Claiming that students who sign up for technical writing courses do so to learn how to "write in a harness," Mitchell explains that almost all writing done in the real world is according to specified syle manuals and expected formats. Therefore, we should teach students how to write according to these criteria without giving them too much theoretical background. Technical writing is a skills course and should indoctrinate the students so that they will be prepared to produce documents like those presently produced in industry and government.

16. Silver, Marilyn B. "Teaching Writing to Adult Learners: Using Job-Related Materials." *ICUT*, 30 (Winter 1982) 1, 33-37.

Silver explains that, at Delaware Technical and Community College, the English faculty have replaced the traditional compositon classes with business writing classes because functional writing motivates the students. Writing is now taught as a technical skill. To determine what should be taught, the English department surveyed industry, and then they constructed their courses around the needs and practices discovered in the survey.

17. Stevenson, Dwight W. "Toward a Rhetoric of Scientific and Technical Discourse." *TWT*, 5 (Fall 1977), 4-10.

Stevenson points to three areas of concern to writers in industry and government that are not adequately researched. Rhetoricians should study these areas empirically and produce guidelines that will help writers know how to produce good documents and how to recognize a good one when they see it. The three areas are technology assessments, visuals, and manuals.

18. Tebeaux, Elizabeth. "Keeping Technical Writing Relevant (Or, How to Become a Dictator)." *CE*, 45 (Feb. 1983) 2, 174-183.

Tebeaux describes the dissemination process in industry and concludes that technical writing teachers should be instructing students how to dictate. To dictate effectively, students need to know how to use sentence outlines, how to make dictation clear to the transcriptionist, and how to edit. She then lists several benefits students would derive from such instruction.

C. Descriptions of In-House Courses, Team-Taught Courses, or Case-Method Courses

19. Andrews, Deborah C. "Teaching Writing in the Engineering Classroom." *EE*, (November 1975), 169-174.

Andrews describes a series of three courses in metallurgy in which she, an English teacher, co-teaches with the engineering teacher. Eighty percent of the class time is controlled by the engineering teacher and twenty percent by Andrews. Students get credit in English as well as in engineering. Andrews describes the writing requirements of the three classes and discusses three problem areas she deals with in her lectures: selecting information, oraginizing information and using language effectively. The article ends with an evaluation of the technique.

20. Barton, Ben F. and Marthalee S. Barton. "The Case Method: Bridging the Gap between Engineering Student and Professional." In *Courses, Components, and Exercises in Technical Communication*, Stevenson, ed., pp. 22-33.

This article describes a case method approach to teaching technical writing. Students work for Bellevue construction company and must write several documents based on realistic problems. After describing the course, the authors evaluate it, claiming the advantages of unity, relevancy, and adaptability. They list two disadvantages: 1) students cannot serve as editors because they all are writing the same document; 2) students cannot choose their own topics. The article's references provide helpful cites for further research of the case method.

21. Fleischhauer, F. W. "Meeting the Writing Needs of Business and Industry." *JTWC*, 11 (1981) 3, 223-232.

This article describes an in-house course designed to teach documents that carry the day-to-day operations of the company. Students are taught the mechanics for transferring information: selecting content, selecting words and sentence structures, and determining a readable structure. In-house writing is divided into three types based on intent: writing to prescribe, to report, and to persuade. Strategies for each type are explained.

22. Hall, Dean G. "Bridging the Gap: Simulation Writing in Engineering Communication Course." *1984 Midwest ASEE Proceedings*, Section IA.

Hall describes a holistic case approach to teaching technical writing. This approach, he claims, simulates writing in the real world. First he shows how the researcher investigates a case by making contact with someone in industry and following a project through to completion. Then the researcher creates a fictitious case that follows the same sequence. Students must work through an entire project and write all the same types of documents as did the original engineer. Advantages include the students' having a real audience, real assignments, realistic information, and realistic solutions.

23. Johnson, Lawrence J. "A Professional Scenario fpr the Technical Writing Classroom." In *Course, Components and Exercises*, ed. Stevenson, pp. 3-21.

Johnson describes a course built around a hypothetical company. Students are employees of PROINFO, a clearing house for professional information. They are given a variety of assignments in letter or memo form (copies are included in the article) and the students write specific types of documents for hypothetical situations.

24. Khachaturian, Armen and Herman A. Estrin. "Teaching In-House Technical Communication Courses." *1984 College-Industry Education Conference Proceedings*, 218-221.

The authors describe in-service seminars designed to teach engineers how to present effective oral and written reports. The course objectives are listed along with the texts used and a detailed syllabus. These courses involve relatively heavy reading of articles in the field, a feature somewhat different from several courses described.

25. Loris, Michelle Carbone. "A Collaborative Learning Model: The Rhetorical Situation as a Basis for Teaching Business Communication." *ABCA*, 46 (March 1983) 1, 25-27.

Loris describes an "In-Class Corporation" that effectively combines collaborative learning with a rhetorical situation. Because surveys have shown that real-world writers collaborate on writing tasks, the class is broken into groups which work together throughout the course to produce documents. All of the groups together make up the In-Class Corporation. Loris includes a list and description of assignments.

26. Mair, David. "English and Engineering Team Up to Prepare Students for Writing in the Real World." *1984 Midwest ASEE Proceedings*, Section IVB.

Mair's paper describes a team-taught course at the University of Oklahoma in which a chemical engineering teacher with industrial experience creates the writing assignments. Several examples of the assignments are given, showing the real-world nature of the writing problems created. Such an approach is one way for the English teacher to compensate for his lack of industrial experience. The paper's introduction would be interesting to those researching the history of technical communication. Seven articles, dated from 1913 to 1954, are cited showing engineering's long lasting concern with effective writing skills.

27. Mitchell, Ruth. "Shared Responsibility: Teaching Technical Writing in the University." *CE*, 43 (October 1981) 6, 543-555.

In an attempt to call a truce to the argument about who is responsible for teaching technical writing, Mitchell divides technical writing into three types: 1) that aimed primarily at peers, 2) that aimed at nonpeer users and customers, and 3) that aimed at decision makers. After describing each, she draws three conclusions: 1) all types should be taught at the undergraduate and graduate levels--type one being taught primarily by discipline instructors, types two and three by English instructors--2) the responsibility for teaching writing belongs to no single depart-

ment; and 3) writing instruction should not be relegated to a subpart of a class like "the engineer's social responsibilty."

28. Nelson, Bonnie. "Team Teaching . . . In Separate Classes." *1984 Midwest ASEE Proceedings*, Section III C.

Nelson explains how engineering teachers can help students in technical writing without having to team-teach a course. She suggests engineering teachers can show students how industry uses technical information. That is, they can help students understand the context of a writing situation. Such instruction would help students understand who they would write to and why. Nelson does not advocate a team-taught course because such an approach often separates form from content, the engineering teacher grading content and the English teacher grading form. Rather, in a technical writing class, students should concentrate on writing rather than on learning new technical material.

29. Orth, Michael and Carl R. B. Brown. "Computer Generated Rhetorical Simulations for Business and Report Writing Courses." *JTWC*, 14 (1984) 1, 29-34.

This article offers a variation of the case method apprach to writing assignments. Students play computer games that require business or technical skills and write reports explaining how to solve the problems presented in the games/simulations.

30. Roundy, Nancy. "Team-Teaching Technical Writing: Audience Analysis and the Lab Report." *EE*, (Feb. 1982), 395-396.

Roundy describes a team-taught technical writing course at the University of Oklahoma. The course is divided into two segments: a two-hour component in the forms and techniques of technical writing, and--the next semester--a one-hour course taught in conjunction with the students' unit operations laboratory. After describing the content of her lectures, Roundy lists three benefits of the team-taught component: 1) technical writing becomes discipline-specific, 2) students begin to believe writing is important, and 3) students learn to adapt their reports to two audiences, an expert and a layman.

31. Selfe, Cynthia L. and Freydoon Arbabi. "Writing to Learn: Engineering Student Journals," *EE* Nov. 1983, 86-89.

The authors report an experiment that tried to incorporate writing into a structural analysis class at Michigan Technological University. Students were required to keep journals, which eventually proved to be valuable as problem-solving tools, as forums for personal comments, as learning tools and as a positive writing experience. The instructors also benefited from the journals as they proved to be a valuable source of feedback.

32. Silver, Marilyn B. "Technical Report Writing in the Community College: An Interdisciplinary Approach." *TWT* 9 (Spring 1982) 3, 173-178.

After conducting a "needs assessment survey of skills required of . . . graduates," Silver created an interdisciplinary technical writing class. The writing class syllabus was constructed around a writing project assigned in a dental health class. Copies of the same report were submitted in both classes.

33. Spears, James E. "A Simulated Writing Experience." *EE*, (Jan. 1979), 342-343.

Spears describes a manual writing assignment that brings together the rest of the course's content. Students bring in manuals and analyze them. They are then divided into groups of five. Each group chooses a mechanism and writes a manual for it. Members of the group evaluate each other's contributions.

34. Sylvester, Nicholas D. "Engineering Education Must Improve the Communication Skills of Its Graduates." *EE* (April 1980), 739-40.

Sylvester stresses that engineers have difficulty communicating and something must be done to remedy the problem. He agrees with Mathes that engineering teachers should be responsible for teaching technical writing, a responsibility that should not be abdicated to English and speech departments. He suggests that engineering faculty incorporate the requirement of good communication skills into their courses.

35. Woods, Donald R. and Irwin A. Feuerstein. "On Teaching Technical Communication." *EE*, (April 1980) 745-749.

The authors, both chemical engineering professors, describe a course they teach in technical communication. The course tries to develop prerequisite skills, interact at the level of a novice, and identify objectives. They list their methods of teaching, discuss a few variations in the course, and evaluate the course. This article is a good example of what engineering faculty can do to teach technical writing.

D. Articles Claiming that Teachers of Technical Writing Need Experience in Industry

36. Kellner, R. S. "A Question of Competency." *ABCA*, 45 (Sep. 1982) 3, 5-10.

Kellner claims that the distinction between business writing and technical writing is being blurred, resulting in the degeneration

of technical writing. He points to three contributing causes: 1) incompetent English teachers teaching technical writing, 2) poorly written textbooks, and 3) inadequate content in classes. He believes technical writing teachers should have work experience, first-hand knowledge of day-to-day transactions, academic training in the specific field of technical writing, and knowledge of science and technology. After describing the shortage of qualified teachers, he attacks current textbooks for including irrelevant material, and criticizes syllabi because they waste time on subjects like resumes and library research. He suggests that teachers be given more training or that English teachers team teach with people from other departments.

37. Mathes, J. C., Dwight W. Stevenson, Peter Klaver. "Technical Writing: The Engineering Educator's Responsibility." *EE*, 69 (Jan. 1979), 331-334.

This article argues that the responsibility for teaching technical writing should not be turned over to English departments because 1) English departments have goals that conflict with technical communication, 2) they teach writing using a set of principles antithetical to those of technical writing, and 3) most English teachers have little training (if any) in how to teach writing. Two alternatives are suggested: contract with English departments but control what goes on or keep technical writing in the engineering college. The engineering college could hire its own full-time technical writing teachers or require their engineering faculty to teach writing in applied engineering courses.

38. "The Technical Writing Controversy." *ABCA*, 46 (June 1983) 2, 4-11.

This article is a collection of eight letters sent in response to Professor Kellner's "A Question of Competency." Kellner then responds to the letters. Most of the letters agree with Kellner's criticism of technical writing teachers, but a couple argue that English teachers can become good technical writing teachers by doing their homework. Several letters suggest ways of solving the problem of incompetence.

II. CONNECTIONS WITH LIBERAL ARTS AND THE ACADEMIC WORLD

A. Studies of Professional Writing to Discover Process, Context, or Deficiencies.

39. Aldrich, Pearl G. "Adult Writers: Some Reasons for Ineffective Writing on the Job." *CCC*, 33 (Oct. 1982) 3, 284-87.

Aldrich reports the results of a questionaire developed to test writers in industry and government. The questionaire was designed to test these writers' knowledge of the composing process. Aldrich found that a majority of the writers were deficient in areas of planning and revision. She also discovered a high level of writing anxiety. Her conclusion is that adult writers often have no method to plan their work and organize their material. For more detail on the survery see TWT, 9 (Spring 1982) 3, 128-132.

40. Dodge, Richard W. "What to Report." *Westinghous Engineer*. July-September, 1962, pp. 108-11. In *Strategies for Business and Technical Writing*, ed. Harty, pp. 205-212.

This article is dated but is still used extensively. Based on a survey conducted at Westinghouse, the article lists the type of information managers want to know and depicts the reading habits of managers, showing what parts of a report are most frequently read. The article goes on to give suggestions to managers about how they can help control the content of a report through conferences.

41. Fine, Marlene G. "Writing Skills in Business: Needs, Training Strategies, and Double Binds." *ABCA*, 46 (June 1983) 2, 12-16.

This article is divided into three parts. First, Fine discusses three needs in corporate writing: prewriting, sentence structure and vocabulary, and organization. Then she describes an in-house course she teaches and shows how the course helps writers solve writing problems. Finally, she suggests that the business community does not value clear writing, and she lists several explanations: writers don't know their subject and want to cover their ignorance, writers are afraid to confront reality, they want to sound like experts, and they want to avoid taking responsibility.

42. Odell, Lee and Dixie Goswami. "Writing in a Non-Academic Setting." *Research in Teaching English*, 16 (Oct. 1982) 3, 201-223.

The authors report the results of a study designed to determine if writers in a non academic setting make stylistic choices for rhetorical or a-rhetorical reasons. The study was designed according to current communication and composition research techniques. They found that writers were aware of the rhetorical setting, being aware of their own ethos, the audience, and the constraints of the subject. They also found that writers, when asked to judge

acceptable style, prefer passive voice constructions to active voice. The report ends with suggestions for future research.

43. Selzer, Jack. "The Composing Processes of an Engineer." *CCC*, 34 (May 1983) 2, 178-87.

Selzer discusses the writing process of Kenneth E. Nelson, an engineer in Chicago. The writing process is divided into planning and inventing, arrangement, drafting, and revision. Selzer reports the strategies used by Nelson and the length of time spent on each step. In the discussion section, Selzer recommends that technical writing classes place more emphasis on the writing process and spend more time with invention strategies.

44. Souther, James W. "What Management Wants in the Technical Report." *Journal of English Education*, 52 (1962), 498-503. In *Readings in Technical Writing*, Leonard and McGuire, eds., pp. 101-106.

Like the article by Dodge, this article is dated but useful. It too reports the results of a survey of managers at Westinghouse, describing how the survey was conducted, and giving information about management's reading habits, and informational needs and wants. The article goes on to briefly describe two guides that resulted from the survey, one for managers and one for authors.

B. Applications of Theory to Technical Writing

45. Anderson, Paul V. "The Need for Better Research in Technical Communication." *JTWC*, 10 (1980) 4, 271-282.

Using Stephen Toulmin's definition for a discipline, Anderson suggests that we need better research in technical writing. A discipline, according Toulmin, has three essential activities: posing problems, generating alternative solutions, and selecting from the alternatives. Anderson believes technical communication comprises three disciplines: the profession (those practicing it in industry), the teaching of technical communication, and the theory of communication. The first is the most advanced; the other two are weaker, especially theory. Anderson suggests several projects that need doing, each classified under the three essential activities of a discipline described by Toulmin.

46. Flower, Linda S. "Communication Strategy in Professional Writing: Teaching a Rhetorical Case." In *Courses, Components, and Exercises*, Stevenson, ed., 34-46.

Flower claims that students develop strategies for effective writing in school which will not work in the real world because the situation is different. She suggests teaching a rhetorical case, making reference to Bitzer's "Rhetorical Situation." The case

should have four elements: 1) a realistic exigency, 2) a demanding audience who needs the document, 3) a meaningful role for the student writer, and 4) a body of unsifted information in temporal form. Flower believes the primary task of a writer is to reorder information as it exists in the memory to fit the purpose of the communication and to meet the needs of the audience.

47. Hall, Dennis R. "The Role of Invention in Technical Writing." *TWT*, 4 (Fall 1976), 13-24.

Hall claims that most technical writing textbooks ignore invention, but invention is an extremely impotant aspect of the writer's process. Instead, most textbooks stress form and format, resulting in form controlling content instead of content controlling form. Hall refers to classical rhetoric and Young, Becker, and Pike to explain what invention is and what place it holds in the writing process.

48. Harris, Elizabeth. "Applications of Kinneavy's Theory of Discourse to Technical Writing." *CE*, 40 (Feb 1979) 6, 625-32.

Harris suggests that Kinneavy's *Theory of Discourse* can be applied to teaching technical writing. First, his analysis of discourse helps define technical writing as referential. His four modes of discourse are useful in teaching students the parts of reports. His division of referential writing into exploratory, informative, and scientific discourse can be used to create a course outline. Finally, Kinneavy's theory gives depth to technical writing. Students can be given reasons in support of practice. In short, students will be able to ground their practice on solid theoretical principles.

49. Lipson, Carol S. "Theoretical and Empirical Considerations for Designing Openings of Technical and Business Reports." *JBC*, 20 (Winter 1983) 1, 41-53.

Lipson is concerned about the amount of repetition that occurs early in formal reports. She first explains the basis for the present practice and then surveys studies that assess the value of repetition. These studies are drawn form a variety of disciplines, including speech, cognitive psychology, rhetoric, and linguistics. She recommends that report introductions first give a description of the report's context and value, followed by a summary of findings and recommendations. Extensive repetition should be avoided because it causes annoyance and boredom.

50. Lunsford, Andrea. "Classical Rhetoric and Technical Writing." *CCC*, 27 (Oct. 1976) 3, 289-91.

Lunsford explains how she uses concepts from classical rhetoric in her technical writing class. She uses Demosthene's first speech,

Against Aphobus I, to teach structure. Students compare its structure to a technical report and can see that modern report writing is part of a 2500-year-old tradition. She also uses Cicero's *De Oratore* when she discusses oral reporting, gleaning helpful hints on memory and delivery.

51. Lynn, Steven Walton. "Kinneavy, Mathes, Mumford, and Lynn: Teaching the Classificatory Mode in Technical Writing." *JTWC*, 10 (1980) 2, 115-24.

Lynn explains how he teaches classification in his technical writing class. First he summarizes Kinneavy's theory as it relates to classification. He then asks students to read Lewis Mumford's "Machines, Utilities and 'the Machine'" and define the terms. He then gives them examples of classification so that they learn to recognize it. The students try to analyze Mumford's article again, this time with more success, because they are using Mathes's method of contextual editing. Finally, the students try to write their own classification paper.

52. Mathes, J. C. and Dwight W. Stevenson, "Completing the Bridge: Report Writng in 'Real Life' Engineering Course." *EE*, 67 (Nov. 1976) 2, 154-58.

Mathes and Stevenson give advice to engineering teachers about how to make writing assignments in their classes parallel those in industry. First they contrast the purpose and audiences of classroom writing with industrial writing. Primarily classroom writing stresses pedagogical purposes, and industrial writing stresses instrumental purposes. They then make three suggestions: 1) student report introductions should include information about the organizational context of the report, i.e., the role it plays in the organization; 2) student reports should be less detailed in their methodology sections and more detailed in their discussion sections; 3) student reports should move the conclusions and recommendations to the front of the report to answer the most important questions first.

53. Miller, Carolyn. "Technology as a Form of Consciousness: A Study of Contemporary Ethos." *CSSJ*, 29 (1978), 228-236.

This article is divided into four parts. The introduction defines technology and divides it into high-context and low-context technology. Section I describes two characteristics of technology: tools start out as means and end up as ends, and tools and machines which were designed as extensions of ourselves become part of the external world. Section II discusses the effects of high technology on culture and thought. First it promotes organized intelligence, and second, to produce effieciency, it conceives of the world as a closed system, resulting in the collapse of invention.

Section III discusses the effect of technology on discourse. It fosters impersonality; it substitutes procedures for invention; it elevates form over content; it fragments society, hindering decision making; and it attacks individual ethos.

54. Petersen, Bruce T. "Conceptual Patterns in Industrial and Academic Discourse." *JTWC*, 14 (1984) 2, 95-107.

Petersen reports the results of a study designed to determine whether technical reports simply state facts or move to higher levels of abstraction. The study was designed using Mofett and Britton's levels of abstractions. The study showed that most good technical writing does more than report facts: it moves to higher levels of abstraction which reflect the writer's conception rather than the real world phenomenon.

55. Ross, Doanld, Jr. "A Theory of the Function of Technical Writing." *TWT*, 9 (Fall 1981) 1, 3-9.

Ross believes that technical writing's essential function is to serve as a replacement for memory. He then applies this theory to various conventions in technical reports, explaining how they help people who search a company's archives, and prescribing effective ways of constructing these elements. This theory makes sense of the conventions while also showing areas where improvement is possible.

56. Selzer, Jack. "Another Look at Paragraphs in Technical Writing." *JTWC*, 10 (1980) 4, 293-301.

Selzer suggests that technical writing teachers need to do more research into paragraph structure and spend more time teaching it in class. After explaining why paragraphs receive so little attention, he gives a brief survey of some modern studies on the subject. Especially interesting is his reference to the "given-new contract," a concept developed by cognitive psychologists. The list of references serves as an excellent introduction to studies in paragraphs.

57. Sides, Charles H. "Heuristics or Prescription: Synthesis Rather than Choice." *JTWC*, 11 (1981) 2, 115-20.

Making reference to the debate over use of heuristics in technical writing, Sides proposes a truce. Those arguing against their use claim that they lead a writer to choose his/her own voice over conventional forms. Therefore, students should be taught formats, not heuristics. Sides suggests that heuristics are helpful prewriting devices as long as they are kept under control. This article contains a fairly extensive annotated bibliography divided into categories of 1) heuristics, 2) prescription, and 3) heuristics and prescription combined.

58. Warren, Thomas L. "Teaching Engineers How to be Effective Communicators." *1984 Midwest ASEE Proceedings*, section III C.

Using cognitive psychology to support his method, Warren explains the skills and knowledge a report writer should have. First, the writer should understand how the reader's mind processes information. A key factor here is pattern recognition. Next, the writer must analyze the reader and his/her needs. Warren explains several assignments he gives students to help them understand the rhetorical situation. Finally, he describes two organizational patterns for reports: material-centered and reader-centered.

C. Articles Making Connections with Liberal Arts or History

59. Dorbin, Donald N. "Is Technical Writing Particularly Objective?" *CE* 47 (3) March 1985, 237-251.

Dorbin argues, based on the philosophical position of holism, that technical writing is no more objective than other types of writing. Its objectivity is similar to the objectivity a radiologist has in reading x-rays or similar to objectivity in legal writing. Objective judgments are objective because others in the same cultural group would come to the same conclusions. Technical judgments derive from thinking technologically. Making reference to Heidegger, Dorbin shows that thinking technologically involves seeing the subject in respect to its uses. Technological objectivity means that things are interchangeable. Dorbin then explores four ways of viewing the relationship between technological judgments and the writing which expresses them, and considers the practical and moral implications of each.

60. Gresham, Steven. "Benjamin Franklin's Contributions to the Development of Technical Communications." *JTWC*, 7(1977)1, 5-13.

Gresham points out that Franklin had considerable influence shaping the practice of technical writing in his day, but his writing can teach modern students of technical writing a great deal. The article discusses Franklin's writing style, especially his use of active, forceful verbs and transitions. Gresham also praises Franklin's use of technical formats, concrete language, and audience analysis. Finally, the article discusses Franklin's attitude toward technical communication (that technological advancement is dependent on good communication) and his attitude toward technology itself (that it is a service to mankind).

61. Grimshaw, James A., Jr. and William E. McCarron. "Hidden Persuasions in Technical Writing." *TWT*, 9 (Fall 1981) 1, 19-22.

The authors argue that most technical reports are persuasive in

nature. Even instruction manuals have persuasive elements. Therefore, students should study the ethical, logical, and pathetic appeals of classical rhetoric. They also suggest that all language may be persuasive in that it reveals a view of reality rather than absolute reality.

62. Halloran, S. Michael. "Eloquence in a Technological Society." *CSSJ*, 29 (1978), 221-227.

This article falls into two main sections. The first describes the present conception of writing as being a technology reserved for specialists. As a result, engineering faculty ignore it, stressing content divorced from form. Writing instruction places emphasis on skills and techniques, making technical writing mystical to most readers. This view of writing is traced to Ramus and early scientists. But the philosophy of science has changed, acknowledging that content cannot be divorced from form. The second part of the article envisions a new but ancient conception of writing as eloquence. Engineering teachers would teach appropriate rhetorical forms in the content areas, and students would mature as full members of their group, eloquence being a sign of maturity. So conceived, writing would not be a technology, reserved for experts, but a virtue, or essential attribute of a mature person.

63. Halloran, S. Michael. "Technical Writing and the Rhetoric of Science." *JTWC*, 8 (1978), 77-88.

Halloran claims that technical writing has an important place in rhetoric, and rhetoric offers a useful perspective from which to analyze technical writing. He traces the history of the rhetoric-science split to concepts of rhetoric and science held during the Renaissance. Both rhetoric and science have changed, scientists acknowledging that rhetoric is at the heart of their discipline, and rhetoricians defining their art in terms of social interaction. In the second part of the article, Halloran analyzes *The Double Helix*, which reveals scientists' concern with ethos and language. The question of sameness and difference as it relates to identification in rhetoric is discussed. Halloran claims that technical writing could be a central element in a liberal arts education.

64. Halloran, S. Micahel and Merrill D. Whitburn. "Ciceronian Rhetoric and the Rise of Science. The Plain Style Reconsidered," in *The Rhetorical Tradition and Modern Writing*, Murphy, ed., 58 - 72.

The authors argue against trying to reduce writing to quantitative measurements of writing maturity (Hunt, Mellon, Christensen) or readability (Hirsch, Flesch, Gunning). They suggest that writing style is better understood in the light of Cicero's "symphonic" view of the three styles. Form and content should not be separated. But during the seventeenth century, apologists for the

new sciences separated rhetoric and knowledge, advocating a style free of tropes and figures. Modern Scientific writing could be improved by viewing writing as personal expression and by allowing writers to use as many rhetorical devices as necessary to improve their style. Human judgment is superior to quantitative analysis of style.

65. Harris, Elizabeth. "In Defense of the Liberal-Arts Approach to Technical Writing." *CE*, 44 (Oct. 1982) 6, 628-36.

Harris describes three perspectives from which the liberal-arts approach to technical writing appears suspect: 1) the anti-academic, which sees technical writing as purely practical writing; 2) the pedagogical, which concentrates on how to teach; and 3) the social scientific, which researches present practices. Although the last two perspectives have contributed to the discipline, they are insufficient. Liberal arts studies have much to contribute. These arts would include literary theory, rhetoric, linguistics, and the philosophy and history of science.

66. "Journalism and Writing: A Roundtable." *ABCA*, 46 (Sept. 1983) 3, 6-12.

This article is a collection of four peoples' opinions about business writing's relationship to journalism. John Pauly believes they are much alike because both separate form from content. Jack Selzer points out that business writng is aimed at a different kind of audience with different needs. James Stull recommends the 5 W's and H as a prewriting technique for business writers. Karen Fontenot and Steven Golen claim that the inverted pyramid is an effective pattern for business writers.

67. Kilgore, Deborah. "Moby Dick: A Whale of a Handbook for Technical Writing Teachers." *JTWC*, 11 (1981) 3, 209-16.

Moby Dick is a good handbook for technical writers. Melville's method and background are good examples of how to adapt information to a reader, gather information, and experience the subject before writing about it. It also contains excellent examples of technical definitions, descriptions, and process descriptions. The article lists chapters especially pertinent to technical writing.

68. LaRoche, Mary. "Technical Writing in the Picaresque Mode: A Perspective from Experience." *CE*, 45 (Jan. 1983) 1, 61-66.

LaRoche argues that technical writing is rhetorical because the writer's choices about what to include and where to place it affect the reader's acceptance of the message. She supports her thesis by citing two examples of writing projects she has worked on, one a manual, the other a report recommending a coherent plan for the army's future development of tanks. She also refers to Kenneth

Burke's claim that all language is suasive. In short, the writer establishes the significance of information by choosing a context for it.

69. Lipson, Carol. "A Contemplative View of Technical Writing." *1983 Council for Programs in Technical and Scientific Communication Proceedings*, 85-104.

Lipson describes two groups who approach technical writing differently: 1) those who study practice in industry ard abstract rules to be taught, 2) those who have argued that scientific and technical writing are based on disciplines that are intersubjective; therefore, writing should be more subjective. She then discusses a third trend, the movement based on solid theory that advocates teaching present practice to make students ready for rhetorical communities. Finally, she argues that conventional practices should be taught, but also the ideologies upon which they are built. Academics can and should be an agent of change, but the change cannot be drastic.

70. Lipson, Carol. "Descriptions in Medieval Times: Lessons to be Learnt from Geoffrey Chaucer's 'Treatise on the Astrolabe.'" *JTWC*, 12 (1982) 3.

Lipson analyzes Chaucer's 'A Treatise on the Astrolabe' to determine how it fits in with the then current practice of writing technical manuals and to glean suggestions for modern technical writers. The article first explains what an astrolabe is and explains the reasons Chaucer had for writing the manual. Lipson then compares Chaucer's manual with one written on the same subject in the eigth century by Messahala. Next Chaucer's manual is described in some detail, special attention being given to the preface, the description and the list of instructions. The article ends with a discussion of the manual's significance to modern technical writing.

71. Miller, Carolyn R. "A Humanistic Rationale for Technical Writing." *CE*, 40 (Feb. 1979) 6, 610-17.

Miller claims that technical writing is considered a skills course because we are influenced by the positivist view of science which views language as a windowpane to the real world. This view has affected the teaching of technical writing by creating false definitions of the subject, ignoring invention (traceable to Ramus), insisting on an objective tone, and analyzing readers in terms of levels. But scientists have abandoned the positivist view in favor of an epistemology based on intersubjectivity, the consensualist view. This view of science is rhetorical. Technical writing classes should be taught with this view in mind. Such courses would stress that writers are part of a community, that the writer needs to understand his role in that community. Such a course

would be a kind of enculturation, addressing the understanding as well as teaching skills.

72. Miller, Walter James. "What Can the Technical Writer of the Past Teach the Technical Writer of Today?" *IRE Transactions on Engineering Writing and Speech*, EWS-4, No. 3, December 1961. In *Technical and Professional Writing*, Estrin, ed., 260-78.

This article is dated, but it served as a pioneer in this type of study. Miller discusses twelve technical writers from the past: Vitruvius, Frontinus, Biringuccio, Agricola, Smeaton, McAdam, Rankine, Eads, Wellington, Ammann, Hoover, and Raymond. He points out special stylistic features of each and concludes that technical writing can take different forms, be energetic, and have elements of personality.

73. Rothmel, Steven Zachary. "Technical and Creative Writing: Common Process, Common Goals." *JTWC*, 11 (1981) 3, 203-208.

Writers of technical and creative discourse encounter problems common to both. Both must learn to be creative within the forms they work with. Both strive for correct and effective language useage. Both must expereince a similar writing process and chose a controlling structure. Both strive for readability, and both try to appeal to the audience.

74. Tebeaux, Elizabeth. "Franklin's Autobiography: Important Lessons in Tone, Syntax, and Persona." *JTWC*, 11 (1981), 341-349.

Tebeaux claims that students can learn a great deal about clear style by reading Franklin's *Autobiography*. She shows how Frank. in controls tone, uses active voice and series, and makes his writing readable. Franklin's excellent example of clear, simple, and powerful language convinces students that the style advocated in technical writing classes does not have to be dry.

75. Whalen, Tim. "L'Encyclopedie." *TWT*, 9 (Spring 1982) 3, 152-55.

This article is a brief history of how the first encyclopedia was written. It describes the conditions under which it was written, mentions the contributors and their purposes, and talks about the editor. Whalen says *L'Encyclopedie* is the first example of an effort to collect, publish, and disseminate technical information. It should encourage modern technical writers.

76. Whitburn, Merrill. "Personality in Scientific and Technical Writing." *JTWC*, 6 (1974) 4, 299-306.

Making reference to traditional views of science, Whitburn explains that objective and impersonal style has been advocated for writing in the field. But, as Kuhn points out, science is not entirely

impersonal; revolutions occur for human and personal reasons. Whitburn suggests that present-day technical writers can learn from seventeenth century writing about science. He gives the example of Fontenelle's "A Plurality of Worlds," showing how touches of personality in the writing make it much more interesting and, as a result, more readable.

77. Whitburn, Merrill. "The Plain Style in Scientific and Technical Writing." *JTWC*, 8 (1978), 349-58.

Whitburn describes some of the excesses of the ornate style practiced before the scientific revolution and explains why the scientific community revolted against it. But, as with most reactions, the scientific community's rejection of stylistic considerations has been too extreme. Whitburn describes his attempt to teach stylistic techniques like parallelism, parenthesis, polysyndeton and antithesis to students in a graduate technical writing class. He believes these rhetorical devices allow students to write more readable, more interesting, more concise, and more personal documents.

D. Arguments that English Teachers Can Make Good Technical Writing Teachers

78. Barnum, Carol M. "The Metamorphosis of the English Teacher: From Lit Jock to Tech Writer." *TWT*, 9 (Fall 1981) 1, 25-28.

Barnum argues that English teachers can do a good job of teaching technical writing because of their excellent background in language skills. Their major weakness is their unfamiliarity with science and technology, a weakness that can only be remedied by "getting your hands dirty." The metamorphosis from lit jock to tech writer can be effected by 1) auditing courses in science and technology, 2) team teaching with professors from technical areas, 3) attending meetings of professsional organizations, 4) reading textbooks, 5) attending technical writing institutes, 6) becoming a consultant, or 7) teaching a continuing education course.

79. Hull, Keith. "Notes from the Besieged, or Why English Teachers Should Teach Technical Writing." *CE*, 41 (April 1980), 876-83.

Hull attempts to refute Mathes, Stevenson, and Klaver's claim that English teachers are poorly trained and should not teach technical writing. He argues that English majors do not read only fiction and poetry; rather, they read a vast quantity of several types of writing, analyze it carefully, and write technical papers about it. He also claims that the study of classical rhetoric gives English teachers a clear understanding of language and its uses. If anything, the English major's training is a case of overkill. He or

she must choose from a vast background those principles and examples of writing appropriate to technical writing.

80. Orth, Mel F. "We Don't Get No Respect." *TWT*, 9 (Winter 1982) 2, 110-12.

This article is a delightful little piece of satire which ostensively argues that engineering teachers should teach technical writing. He lists their qualifications, including their knowledge of how to build bridges and their familiarity with the precise language of mathematics. He then shows English teachers the benefits of not teaching technical writing: they won't be blamed for poor writing skills, colleagues in the technical disciplines won't have to feel uncomfortable around them, and they won't have to be bothered with the higher mathematics involved in staffing the tech writing sections.

81. Sides, Charles H. "What Should We Do with Technical Writing?" *EE*, (April 1980), 743-44.

Sides admits that some of Mathes' criticisms of English teachers are valid, but he argues that technical writing should remain in the English department because 1) if it were transferred to the engineering school, it would degenerate into a service course, 2) English departments do active research into compositon processes, 3) engineering teachers are even less likely to have training in communication skills than English teachers, 4) technical writing taught in engineering schools tends to promote separate languages for separate disciplines, and 5) the principles used to teach writing in English classes are transferrable to technical writing.

82. Whitburn, Merrill D. "The Ideal Orator and Literary Critic as Technical Communicators: An Emerging Revolution in English Departments," in *Essays on Classical Rhetoric and Modern Discourse*, Robert J Connors, et. al., eds, 226 - 247.

Whitburn uses Quintilian's concept of the ideal orator to suggest that English specialists should get involved in technical writing. The ideal orator was no specialist but got involved in shaping his society. Technical communication has been left largely to scientists while English departments have specialized in literature. Technical communicators are neoclassicists because they set up what is as what ought to be, as is apparent in the use of content outlines in industry. Teachers of English could use their understanding of the evolution of genres to give advice to writers in industry so that writiers could begin to adapt writing to the needs of a given situation.

ABBREVIATIONS

JOURNALS

ABCA	*ABCA Bulletin*
CSSJ	*Central States Speech Journal*
CCC	*College Compositon and Communication*
CE	*College English*
EE	*Engineering Education*
ICUT	*Improving College and University Teaching*
JBC	*Journal of Business Communication*
JTWC	*Journal of Technical Writing and Communication*
TETYC	*Teaching English in Two Year College*
TWT	*The Technical Writing Teacher*

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